STATE OF DELAWARE
SINGLE POINT OF CONTACT – SPOC
INTERGOVERNMENTAL REVIEW OF FEDERAL PROGRAMS
Office of Management and Budget
Haslet Building, 3rd Floor, Dover, Delaware 1990112-11-09P02:25 RCVD
(302) 739-4206

1. STATE APPLICATION IDENTIFIER:	SPOC use ONLY	Month	Reviewer	CC's
S9-12-09-02		12	JS	R

2. Applicant Project Title: Delaware's Automated System for Educational Reporting (DASER)Grant Proposal – ARRA

3. Applicant Department: Delaware Department of Education	4. Applicant Division/APU:

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8. Signature of Secretary or Agency Head (for state agencies) or Chief Administrator (for all other applicants)

Mike Jackson, Associate Secretary Michael N

9. Federal Grantor Department: U.S. Department of Education	10. Federal Sub-Agency: National Center for Education Statistics

11. Federal Contact Person: Tate Gould	12. Phone Number: Tate .gould@ed.gov

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14. Federal Program Title:	15. FEDERAL CATALOG NO: (CFDA)
STATEWIDE LONGITUDINAL DATA SYSTEM GRANTS	*84 372* N

16. Project Description:

See attached

17. Will funds be utilized for any technology initiatives? ☐ Yes ☒ No If so, Business Case Number and brief project summary:

All initiatives are data driven

18. Measurable Objectives:
a. What were last year's objectives?

n/a

b. Were these objectives met? (If not, please explain why)

n/a

c. What are this year's objectives?

See attached

12/11/09

(If more space is needed, please attach a separate sheet of paper)

19. Grant Period:	20. How many years has this project been funded:	21. If the project was funded last year, how much federal money was awarded?
From: *7/1/2010* To: *9/30/2013*	*0*	*0*

22. Source of funding for this application:	Dollars
a. Federal grant	*$600,5034*
b. Other federal funds **(Specify source of funding)**	
c. Required state contribution **(Specify source of funding)**	$988,850
d. Discretionary state contribution **(Specify source of funding)**	
e. Required local contribution **(Specify source of funding)**	
f. Other non- federal funds **(Specify source of funding)**	
TOTAL	*$6,993,884*

23. Budget by cost category and source:	Federal Funds	State Funds	Other Funds	Total Funds
Salaries & Fringe Benefits	*0*	*$986,250*		*$986,250*
Personal or Contractual Services	*$5,582,590*			*$5,582,590*
Travel	*$20,100*	*$2,000*		*$22,100*
Supplies & Materials		*$600*		*$600*
Capital Expenditures	*$152,000*			*$152,000*
Audit Fees				
Indirect Costs				
Other	*$250,344*			*$250,344*
TOTAL	*$6.005,034*	*$988,850*		*$6,993,884*

24. How many positions are required for the project? **(Exclude casual/seasonal employees)**

Breakdown of position(s)	Authorized in State Budget	New Positions Required	Total
Paid for out of federal funds			
Paid for out of General Funds (in-kind)	3.05		3.05
Paid for out of state special funds			
Paid for out of bond/local/other funds			
TOTAL	3.05		3.05

ability to analyze student-level data from pre-kindergarten through high school. It will also inform success and readiness for postsecondary education, the 21st Century workforce and the Armed Forces. Second, the grant will support the development of system interoperability between contributing state agencies as well as between Delaware and other states, in order to inform policy based on successful practices. Finally, DDOE intends to develop its capability for the expedient delivery of user-friendly data on student achievement and growth to school leaders, teachers, parents, and other key stakeholders so that all parties will receive the same timely and cogent data being used to drive continuous improvement and decision-making in Delaware's schools.

In order to fulfill the goals of DASER, several subsystems must be developed in order to link the K-12 Instructional Data Warehouse and the Enterprise Longitudinal Data Warehouse. Listed below is a brief description of each subsystem (more detail follows).

- **Client ID Crosswalk Subsystem:** This subsystem of DASER will collect and store different agency client identifiers and store them for matching and identification purposes. It will reduce the redundancy of data maintained by agencies and allow agencies to use current identification systems in conjunction with systems from other agencies.
- **Interoperability:** By using the above subsystem, DASER will allow the exchange of data among agencies and institutions within the State and between States to inform policy and practice. In order to ensure effective utilization, training is a key component in the use of this system and the project will include ongoing instruction for district data officials.
- **Client Management Subsystem Information Layer:** This subsystem will create a unified data processing and reporting system enveloped by an enterprise identity system. This subsystem is the workhorse of the back-end that brings all of the varied data and subsystems together into a larger warehouse with the needed metadata to provide DDOE and its customers with relevant reporting.
- **Enterprise Identity Management and Portal Subsystem:** This subsystem will ensure compliance with FERPA regulations, create confidence in our state partners that data will be safe and secure, and strengthen the DDOE user validation and authentication for access to different levels of data and sets of applications. It will provide distributed administration of the complex user roles and relationships to organizations necessary to provide appropriate access to confidential student data.
- **Enterprise Reporting Subsystem:** Data must be used, not merely collected, to answer critical questions about outcomes and performance, particularly at crucial transition points in the education pipeline. In addition, an ad-hoc reporting subsystem will be created which utilizes the Enterprise Identity Management System to validate user access and then determine what data can be used for reporting.
- **Student Record and Transcript Data Exchange Subsystem:** This subsystem will benefit Local Education Agencies (LEAs), State Education Agencies (SEAs) and the federal government by providing a common framework for student transcripts that will provide meaningful data from Pre-K through entry into the work force.

Delaware has been working on school reform and developing its education longitudinal data system in tandem with its reform efforts for many years. The Delaware Vision 2015 Plan and corresponding Vision Network is an example of the innovation public, private and civic stakeholders who have collaborated to implement Delaware's nationally acclaimed plan to develop a world-class public education system. The Vision Network presently boasts the participation of twenty-five schools, including three charter schools, and serves nearly 20,000 students. These Vision Network partners recognize the need for change and volunteered to focus on the critical areas of leadership and instruction. The Vision Network partners receive, among other things, training on how to use student data to drive decision-making and to adjust instruction to meet students' individual needs. DDOE's present Secretary of Education, Dr. Lillian Lowery, was formerly Superintendent of a Vision Network school district.

Delaware has also made gains by viewing its education pipeline through a P-20 lens. The Delaware P-20 Council was established in 2003 by Governor Ruth Ann Minner's Executive Order 47 and placed in statute in 2005. The Council's overall goal is to establish a logical progression of learning from early childhood to post-secondary education by reducing the need for remediation and with particular attention paid to transition points within the education pipeline. Delaware's P-20 Council has been one of the nation's most active and effective. The P-20 Council benefits from interagency cooperation and representation from state leaders, higher education, and Delaware's business community. Among its many successes, the P-20 Council proposed Delaware's more rigorous graduation requirements that were adopted by the State Board of Education. In addition, the P-20 Council recognized the need for increased data linkages between agencies and sectors to inform its decision making. The P-20 Data Committee was formed by the Council to establish the P-20 Data Cube, linking student level K-12 data to student- and course-level higher education data. The P-20 Data Cube is populated with data from both public and private sector institutions of higher education in Delaware.

Governor Jack Markell, upon his election in 2008, challenged DDOE to transform the public education system. Governor Markell views education as the cornerstone for Delaware's economic growth and quality of life for its citizenry. DDOE has presented the Markell Administration with a new strategic plan in support of this goal. The Delaware Department of Education Innovation Action Team Strategic Plan for the Delaware Public Education System is structured into Five Strategic Goals, each targeting key areas within the overall education system. The five key areas are: 1) Standards and Assessments, 2) Longitudinal Data Systems, 3) Teacher Quality, 4) Low-Performing Schools, and 5) Effective, Efficient Service Delivery. The Plan was developed over several weeks with input from diverse teams of stakeholders. These teams represented each of the Five Strategic Goals of the plan. The teams were asked to identify the most crucial objectives and strategies that would have the greatest impact on improvement in Delaware's public education system and lead it to serve as a model for the nation. In building its longitudinal data systems the DDOE Plan focuses on actions that will build

on existing data systems, including even more value-added data from other state agencies. Specifically, DDOE committed itself to engage in a concentrated initiative to increase the focus on data-driven decision-making in every area of school planning, from teachers to principals to district leaders to parents. This initiative represents a challenge for DDOE: that DDOE will significantly improve the extent to which it uses its sophisticated and robust data to support the assurances of the DDOE Plan. To this end, DDOE will build the data governance structures and processes that will ensure data is used more robustly, is more inclusive and is more accessible by more stakeholders.

The DASER system will serve as the core for all of our longitudinal data collections and include data from early childhood, kindergarten through high school, higher education, and career/workforce development. DDOE can address the weaknesses in the scope of its present Data Warehouse and reporting capabilities by linking the existing K-12 Instructional Data Warehouse with an expanded interagency Enterprise Longitudinal Data Warehouse. In its present systems, DDOE Technology Management and Design has identified the following weaknesses:

- The LDS currently does not include any workforce/labor data.
- There is little data on out-of-state college enrollment.
- K-12 reports are cumbersome to access and not user friendly.
- Reports do not answer the questions posed by a wide enough cross-section of stakeholders.
- We have limited data on Early Childhood.
- There is no cross-agency identity tracking method, making it hard to track students services and outcomes.

DASER's success in providing the information that will drive the continuous improvement called for in the DDOE Strategic Plan depends on putting inter- and intra-agency governance structures in place. These structures will address these weaknesses in addition to fostering interagency collaboration, robust use of data, privacy protection, and research and analysis. Strong outputs are expected by stakeholders and will be delivered when all system components and governance structures are in place.

Delaware Proven Success and Ability to Sustain the System

In 2005 Delaware possessed five of the 10 essential elements of a State Longitudinal Data System as defined by the Data Quality Campaign. After several years of hard work, we expanded our SLDS to encompass all ten elements in 2007. Delaware is unique in that we have several statewide data systems which support our ability to link students, teachers, and schools. The systems we have in place that provide a wealth of core data are:

- Statewide Pupil Accounting System that make use of unique student identifiers.
- Statewide Payroll System for tracking teachers and administrators across districts and schools.

- Statewide financial system which can be used to track expenditures across districts and schools.
- Statewide teacher licensure system with unique teacher and administrator identification.
- Longitudinal testing warehouse which contains test data back to 1997.

Once DASER and its subsystems have been designed, built, and implemented, we will re-direct current staff to maintaining the systems. We have implemented strong application development tracking processes to ensure that bugs are fixed and enhancements are planned for and fixed on a regular basis. All of our currently running data collections systems are routinely evaluated for needed maintenance, enhancements and updates, which are all scheduled annually. Given our successful track record with EDEN/EDFacts Reporting, and the expansion over time of our longitudinal data systems, we have the capacity to deliver DASER on time and to ensure its success and sustainability for the future.

(b) Project Outcomes Related to System Requirements and Implementation

Project Outcome 1: Client ID Crosswalk Subsystem

The Client ID Crosswalk Subsystem of DASER is central to resolving current issues of service fragmentation and would provide more stringent privacy protection of individuals and families by removing the possibility that any one agency would need to work with another's unit-record identifiers. Tiered levels of access to DASER will be more easily managed and the data elements that each access level has will be more finely tuned. Data governance structures will inform developers which stakeholders may use specific data elements and/or determine if access must be handled within the framework of informed client consent. Once complete and operational, the Client ID Crosswalk Subsystem would eliminate tasks that involve the manual matching of disparate identifiers in the present Enterprise Longitudinal Data Warehouse to produce reports that unify data elements. As this system reaches maturity, the level of sophistication of the information generated by the Enterprise Longitudinal Data Warehouse and accessed through DASER will increase dramatically. The Client ID Crosswalk Subsystem is the driver that will permit DASER to deliver a more comprehensive view of the totality of factors affecting an individual student's learning to instructional personnel. Other stakeholders will be able to see aggregated measures that are pertinent to their particular interests and roles in the education pipeline.

Tasks/Outputs – Client ID Crosswalk Subsystem

1. Build a layer of information above both the Enterprise Longitudinal Data Warehouse and the K-12 Instructional Data Warehouse that holds student-client identifiers (e.g. Department of Health and Social Services, Department of Education, Services for Children, Youth and Their Families, institutions of higher education). This layer is unlikely to reside on DDOE servers, given the multi-agency ownership of the Enterprise Longitudinal Data System. A location at the Delaware Department of Technology and Information is anticipated.
2. Determine validation and normalization techniques that will ensure efficient cross-agency identification and optimal functionality.
3. Assign responsibility for the management of the subsystem to the appropriate governing entity.
4. Test the ability of the Client ID Crosswalk Subsystem to track children receiving services across state agencies.

The Client ID Crosswalk Subsystem is the engine that drives DASER. It is also performs the "policing" role of authenticating logins to DASER and pulling together the appropriate data elements in a user-friendly, graphical "dashboard" format. If this application for federal SLDS funds is successful, application development will be able to commence by the third quarter of the first year, with deployment, testing and maintenance plans in place by the end of the first year.

Project Outcome 2: Interoperability

State and district data personnel must be informed and trained on the data standards that the repositories behind DASER will utilize. An enterprise metadata dictionary is a foundational component that will be formalized and consolidated from the separate and disparate data dictionaries that are now maintained both within DDOE and among the external agencies that contribute data to the Enterprise Longitudinal Data Warehouse. The four assurances from the State Fiscal Stabilization Fund (SFSF), and the seven capabilities and 12 elements from the American Competes Act for our existing education longitudinal data require a sustainable policy, process and on-line application to access and manage our data definitions and align them to national standards. DDOE has a recently updated its enterprise metadata dictionary, but as yet has not incorporated interagency data definitions. The data dictionary does have the capacity to produce gap analysis reports for the requirements of specific reporting exercises (e.g. EDFACTS). In addition, an information systems architecture (ISA) is needed to bring together into a single resource guide all of the policies, procedures, standards, templates and processes that must be established and followed in order to permit the continuity of DASER and its components as personnel change within DDOE and the contributing agencies. A detailed data flow and process map will be created to describe how data are collected, stored and accessed across all internal and external administrative units. Much of this is presently documented within the DDOE K-12 Instructional Data Warehouse, but updating will be needed as DASER develops. Assignment of the monitoring and management of this effort will be made to the appropriate data governance entity. Finally we must be able to communicate clearly to our stakeholders what our policies and procedures are regarding the confidentiality of student-client data.

Tasks/Outputs – Interoperability

1. Develop a logical entity relationship diagram (ERD) design of the logical structure of the databases.
2. Develop an online metadata dictionary with statewide standard definitions and codes aligned with national standards.
3. Design and document an enterprise relational data model for DDOE and all agencies, organizations and school districts.
4. Develop policies and procedures to support interoperability by using standard data structures, formats and data definitions to ensure linkage and connectivity among the various levels and types of data.
5. Develop a sustainable policy guide and reference document consolidating laws, regulations, guidelines, policies, etc. related to the collection, storage, access, use and destruction of data.
6. Commence documentation of all quantitative, longitudinal statistics and/or indicators (e.g. dropout rate) and other key facts (e.g. disaggregation by school name).

Project Outcome 3: Client Management Subsystem Information Layer

The Client Management Subsystem Information Layer will create a unified K-12 instructional data processing and reporting subsystem enveloped by an enterprise identity subsystem. The K-12 Instructional Data Warehouse is comprised of a pupil accounting system offering several dashboards to districts, teachers and parents. Centrally managed applications support several core reporting functions at the district level. More in-depth information is provided by a number of data marts under the K-12 Instructional Data Warehouse umbrella. If this application is successful, SLDS funds will accelerate the development of the Client Management System Data Warehouse information layer. This layer will authenticate users via an enterprise identity management system and permit them access to data elements residing on their assigned tier-level of access. At completion, users will not be limited to information based in a particular module, cube or data mart, but rather data elements across both the K-12 Instructional Data Warehouse and the Enterprise Longitudinal Data Warehouse, as deemed appropriate by their assigned tier-level of access. SLDS funds will enable DDOE to expedite development of a layer of information that is intra- and inter-agency in nature, yet appears to the user as a seamless repository of data.

INFORMATION LAYERS		
Client Management System Information Layer		
Intra-Agency Information Layer K-12 Instructional Data Warehouse		**Inter-Agency Information Layer Enterprise Longitudinal Data Warehouse Layer**
Pupil Accounting	Information/Reporting	Repositories
eSchoolPlus -School/District Enrollment -School Status -Student Achievement -NCLB Measures	EDEN/ED FACTS	Children's Services
IEPPlus -Individualized Special Education	Adequate Yearly Progress	Finance and Personnel
Teacher WorkStation -Integrated Gradebook -Assignment Tracking -Attendance Management -Communication with Parent(s)	Unit Count (Finance)	Health and Social Services
Home Access Center -Children's Grades -Attendance -Assignments -Discipline	Data Marts -Delaware State Testing Program -District Finance -DE Educational Personnel Sys. -School Profiles -DSTP Participation	Department of Labor

		Higher Education (P-20 Data Mart)

Tasks/Outputs – Client Management Subsystem Information Layer

1. Develop and implement processes to continually evaluate how data is collected and used.
2. Create a data framework for capturing essential early childhood indicators.
3. Align post-secondary first-year course competencies with K-12 courses to reduce postsecondary remediation.
4. Build capacity within DDOE for planning, research and analysis in order to develop reporting mechanisms that can be used for program evaluation.
5. Link teachers with the postsecondary teacher preparation programs that prepared them for the classroom and compare with student achievement.
6. Integrate Drop-Out Prevention system, with its indicators of at-risk students.
7. Link P-20 data to workforce needs.
8. Link postsecondary outcomes to K-12 curriculum and achievement data.
9. Link P-20 data with National Student Clearinghouse data for a more complete view of student postsecondary enrollment activity such as college transfer activity, time-to-degree and student readiness and persistence in higher education.
10. Build new data repositories that integrate and link student, staff, school facility and financial data.
11. Develop and implement methodologies for data validation and reliability processes.
12. Develop and implement the Individual Student Profile based on stakeholder feedback during Innovation Action Team meetings (Summer, 2009). Organize focus groups to solicit recommendations to improve and/or expand the information included on the profiles.
13. Create data transformation systems as needed to seamlessly import data from external agencies.
14. Develop training that orients educators, parents and policy makers to available data and how it informs continuous school and instructional improvement.
15. Develop a communications and outreach strategy to raise awareness of available data and how DDOE is designing it to inform continuous school improvement.

Project Outcome 4: Enterprise Identity Management and Portal Subsystem

The Enterprise Identity Management and Portal Subsystem of DASER is the gatekeeper to the Client Management Information Layer. The functionality of this subsystem is to provide for the automated administration of complex user roles and relationships necessary to provide appropriate access to confidential student data among diverse stakeholders. The Enterprise Identity Management and Portal Subsystem is the mechanism that will ensure access to student-level data complies with FERPA, to assure partners that data will be safe and secure. This subsystem will also leverage a statewide enterprise portal to provide Delaware educators with Web 2.0 capabilities to publish and share curriculum content, communicate with groups of other educators, and participate in on-line discussion groups with others who share common

interests. A recent analysis by ESP Solutions Group identified three primary directory systems that DDOE must maintain over its present information layers. First, the K-12 Active Directory is a statewide LDAP forest structure used by districts and the DDOE staff to provide basic network and Windows authentication. Second, the eSchoolPLUS Active Directory is a single central LDAP structure used to provide eSchoolPLUS users with authentication and authorization. Third, the DDOE Single Sign-On system which is internally developed and used by 20,000 users to provide authentication for applications with limited-access specifications. Funds received as a result of a successful SLDS Grant application will enable to DDOE to begin development immediately on the Enterprise Identity Management and Portal Subsystem, which harness and unify the three primary authentication systems that will secure the data comprising the Client Management System Information Layer described in Project Outcome #3.

Tasks/Outputs – Enterprise Identity Management and Portal Subsystem

1. Establish a unified Active Directory encompassing in all DDOE information layers.
2. Establish a relational directory showing relationships among users and resources.
3. Establish provisioning that allows administrators to monitor access rights and privileges to ensure the security of resources and user privacy and minimizes vulnerability of systems to security breaches and abuse.
4. Establish a directory manager which allows administrators to set access rights for individual users as well as groups.
5. Establish a single sign-on point of entry to the Client Management Subsystem Information Layer, permitting users anytime access to information in formats of their choosing to facilitate analysis for decision-making.
6. Establish communication and collaboration connections for interactive tools such as meeting services, real-time polls, chats, whiteboard, etc.
7. Establish online community sites that are a location with customized views and specific content for particular groups of users.

Project Outcome 5: Enterprise Reporting

DDOE recognizes that assembling data into repositories is only the first step in promoting the use of data to support continuous improvement in Delaware's schools. DDOE intends to improve both the quality and content of its data reporting, as well as furnish training to educators on how to use data reports to improve classroom outcomes. DDOE must develop its data analysis capacity in order to be able to communicate to educators and decision makers how to interpret data so that they are able to use data effectively as they access our data portals independently to meet their own real-time needs. Professional development for educators who have not previously been data consumers is a crucial component in using data systems. In order to arm educators with information that will foster transformational change, it is imperative that DDOE build reporting capacity. This becomes even more urgent as DDOE introduces the new Delaware Comprehensive Assessment System (DCAS) with its summative and formative components.

DDOE is aware of areas where improvements can be made. An analysis of our reporting capabilities by ESP Solutions Group found that reports and statistical data are indeed posted on the DDOE web site, but there is little guidance on how to interpret the reports and datasets. In many cases, data are not presented in longitudinal tables, thus making it difficult to recognize changes over time. Graphical views are not available and there is often a delay in posting reports and datasets after the underlying data becomes available. Perhaps most importantly, few online tools are provided to make it convenient for external stakeholders and educators to produce ad-hoc queries. Finally, few online tools are offered specifically to teachers. Having acknowledged these weaknesses, it is notable that DDOE is recognized as a leader in ED FACTS reporting. Staff capacity has limited the ability of DDOE to apply the same leadership for the benefit of all of its stakeholders. However, reporting metrics for State Fiscal Stabilization Funds require that DDOE ramp up its reporting capabilities and expand the scope of its instructional reporting to include data elements from external agencies. Funds attained from a successful SLDS Grant proposal will permit DDOE to quickly build the staff capacity to develop more effective reporting on presently available data.

Tasks/Outputs – Enterprise Reporting

1. Design a reporting system to track student growth and progress in order to foster continuous improvement over time.
2. Develop common course coding, GPA calculations, attendance definitions and other standards to facilitate comparisons across schools and districts.
3. Create targeted reports for policymakers, educators, parents and students.
4. Collaborate with researchers to explore effective data presentation and reporting methodologies.
5. Create student profile reports that draw on the full spectrum of Client Management Information Layer data.
6. Create a user interface where an individual student's rate of growth is demonstrated and can be correlated with demographic indicators and state expectations.
7. Create a user interface for parents where individual student progress can be viewed in user-friendly formats.
8. Create user-friendly reports for educators based on indicators that suggest students who may be at risk of dropping out of high school.
9. Create reports that evaluate and rate internal and external intervention programs.
10. Create reports that benchmark Delaware students against national and international metrics.
11. Develop reports that accompany data linkages teachers and teacher preparation programs and suggested impact on classroom outcomes.
12. Reports that demonstrate P-20 alignment with workforce needs.

13. Make available in DASER reports from an expanded Correlates of Achievement Data-Based Indicator System (CoA)[1] to include additional data elements: 1) Health & individual indicators 2) Teacher-level indicators (e.g. attendance) 3) Student mobility 4) Longitudinal data 5) Use of Technology in the classroom. Provide ongoing professional development on how to use the system.
14. Develop reporting mechanisms that will aid in making school and district resource allocations.
15. Develop professional development and training on report interpretation and ongoing communications strategy on available and emerging reporting capabilities.

Project Outcome #6 – Student Record and Transcript Data Exchange Subsystem

DDOE is well-positioned to implement a Student Record and Transcript Data Exchange Subsystem. The statewide pupil accounting system, eSchoolPLUS, maintains transcript data for all secondary students and produces PDF transcripts for use by postsecondary institutions. DDOE has long desired to move beyond the current state-of-the-art transcript production and develop a system that will transfer transcript *data* from inter-connected eSchoolPLUS clients, other pupil accounting systems, colleges, universities or workplace applications. The interoperability of this subsystem will be supported by standard data structures, data formats, and data definitions to ensure linkage and connectivity among varied data formats and hierarchies. DDOE sees this initiative not only as a mechanism to revolutionize the transfer of transcript information, thereby increasing convenience among all users, but *will also serve as a mechanism to drive the necessary buy-in throughout K-12 and postsecondary education to adopt statewide standards in regard to standard data types, data definitions, formats and even GPA calculations.* Statewide common course codes, GPA calculations and student attendance definitions would follow as a logical step in automating the movement of student transcript data. In addition, *since all eSchoolPLUS clients are required to produce transcripts that include the DDOE unique student identifier, we anticipate greatly improved data linkages with the state public and private institutions of higher education as well as improved linkages with workforce data.* If this application for SLDS funds is successful, initial planning could begin immediately, followed by the identification of a state-approved IT consulting firm that would augment DDOE staff by furnishing additional application developers and programmers. Furthermore, by

[1] The Correlates of Achievement Data-Based Indicator System (CoA) was created in 2005 and represents a joint partnership between DDOE and the University of Delaware Research & Development Center and the Delaware Academy for School Leadership (DASL). CoA is based on ETS' Parsing the Achievement Gap report (http://www.ets.org/Media/Research/pdf/PICPARSING.pdf, http://www.ets.org/Media/Research/pdf/PICPARSINGII.pdf), a research synthesis of indicators that affect student achievement. CoA was made available to school and district administrators with the goal of providing them with a user-friendly data system to help them make decisions to improve their schools and with the specific intent to aid in closing the achievement gap among various student groups. Current indicators included in the system focus on student curriculum, teacher experience and preparation, class size, student engagement, suspension and student attendance. Administrators have thus far found CoA to be informative and useful in their school planning and improvement efforts. The Parsing the Achievement Gap II report shows that little has changed in the achievement gaps between subgroups, indicating that work still needs to be done to close achievement gaps. In addition, an expansion of CoA would provide an opportunity to determine if trends indicate that schools are changing over time in regard to these indicators. Determining which additional indicators are available now in Delaware and how they would be collected and reported would be a logical exercise to include in DDOE's overall initiative to develop and expand enterprise reporting.

documenting each development component of the Student Record and Transcript Data Exchange Subsystem, DDOE would be able to share the technology with other states who are contemplating similar systems.

Tasks/Outputs – Student Record and Transcript Data Exchange Subsystem

1. Implement a subsystem capable of generating transcript data for exchange between all public PreK-12 schools and districts and among the institutions of higher education in Delaware.
2. Create and deploy the Delaware Transcript Center application, with appropriate levels of access and activities for school, district, postsecondary and public users.
3. Create state data standards for student record and transcript data.
4. Adopt a statewide course classification system aligned with the Secondary School Course Classification System, School Codes for the Exchange of Data (SCED) system and will be capable of meeting the requirements for linking teachers and students and measuring academic growth for use in this and other DASER system applications described in this document.
5. Develop and provide in-person and online training modules for the various types of users.

(c) Timeline

Project Outcome 1: Client ID Crosswalk Subsystem Timeline

Year	Completion Quarter	Activities
1	1	The Health Education and Workforce Council meets to solidify support for DASER and define agency expectations of the system.
1	1	Agency heads will designate staff to serve on Enterprise Data Warehouse Committee, which will drive and manage development and determine standards for interoperability.
1	1	Agency heads will designate staff to serve on Enterprise Data Warehouse Research and Development Committee, which will develop a preliminary research agenda and processes for requesting and using data for ad hoc research projects.
1	1	Early Childhood Data Committee will meet to define and develop a work plan for consolidating desired data elements into a cube.
1	2	Define a project scope with clear objectives for collecting interagency data. Determine feasibility statuses for the desired contributions from the various agencies and identify any regulatory roadblocks that need to be addressed. Interview agency staff as necessary.
1	3	Document all requirements and recommendations for addressing obstacles. Prepare reports as needed to Health, Education and Workforce Council and other stakeholders (ongoing).
1	4	Add to metadata and architecture models. Select and design technology, data, and business intelligence applications. Design databases. Deploy application, test and establish maintenance plan.
2	1	Develop database queries that will track children receiving services across state agencies. Prepare standard reports that meet the needs of stakeholders (e.g. to help make resource allocation decisions). Prepare reports with findings for the Health, Education and Workforce Council (ongoing).
2	4	Analyze data to determine where relationships exist between services received and possible links to student achievement. Report as required.

Project Outcome 2: Interoperability Timeline

Year	Completion Quarter	Activities
1	1	Develop a logical entity relationship diagram (ERD) design of the logical structure of the databases.
1	4	Develop an online metadata dictionary with statewide standard definitions and codes aligned with national standards.
1	4	Develop policies and procedures to support interoperability by using standard data structures, data formats and data definitions to ensure linkage and connectivity among the various levels and types of data.
2	1	Develop database queries that will track children receiving services across state agencies. Prepare standard reports that meet the needs of stakeholders (e.g. to help make resource allocation decisions). Prepare reports with findings for the Health, Education and Workforce Council (ongoing).
2	4	Design and document an enterprise relational data model for the DDOE and all agencies, organizations and school districts.
2	4	Document all quantitative statistics and/or indicators (e.g. dropout rates) and other key facts (e.g. disaggregation by school name).
2	4	Analyze data to determine where relationships exist between services received and possible links to student achievement. Report as required.
3	4	Add to metadata and architecture models. Select and design technology, data, and business intelligence applications. Design databases. Deploy application, test and establish maintenance plan.
3	4	Produce a sustainable, policies and procedures manual documenting and consolidating laws, regulations, guidelines, policies, etc., related to the collection, storage, access, use and destruction of data.
3	3	Document all requirements and recommendations for addressing obstacles. Prepare reports as needed to Health, Education and Workforce Council and other stakeholders (ongoing).

Project Outcome 3: Client Management Subsystem Information Layer Timeline

Year	Completion Quarter	Activities
1	1	Develop processes to continually evaluate how data is collected and used.
1	1	Link P-20 data with National Student Clearinghouse data for a more complete view of student postsecondary enrollment activity such as college transfer activity, time-to-degree and student readiness and persistence in higher education.
1	2	Integrate Drop-Out Prevention system, with its indicators of at-risk students.
1	2	Develop the Individual Student Profile based on stakeholder feedback during Innovation Action Team meetings (Summer, 2009). Organize focus groups to solicit recommendations to improve and/or expand the information included on the profiles.
1	4	Build capacity within DDOE for planning, research and analysis in order to develop reporting mechanisms that can be used for program evaluation.
1	4	Create a data framework for capturing essential early childhood indicators.
1	4	Link teachers with the postsecondary teacher preparation programs that prepared them for the classroom and compare with student achievement.
1	4	Develop training that orients educators, parents and policy makers to available data and how it informs continuous school and instructional improvement.
1	4	Develop a communications and outreach strategy to raise awareness of available data and how DDOE is designing it to inform continuous school improvement.
2	4	Link P-20 data to workforce needs.
2	4	Link postsecondary outcomes to K-12 curriculum and achievement data.
2	4	Develop training that orients educators, parents and policy makers to available data and how it informs continuous school and instructional improvement.
3	4	Create data transformation systems as needed to seamlessly import data from external agencies.
3	4	Build new data repositories that integrate and link student, staff, school facility and financial data.

Project Outcome 4: Enterprise Identity Management and Portal Subsystem Timeline

Year	Completion Quarter	Activities
1	4	Establish a unified Active Directory overlying all DDOE information layers.
1	4	Establish relational directory that shows relationships among users and resources.
1	4	Establish directory manager which allows administrators to set access rights for individual users as well as groups
2	2	Establish a single sign-on point of entry to the Client Management System Information Layer, permitting users anytime access to information in formats of their choosing to facilitate analysis for decision-making.
2	4	Establish customized views for specific user-types.
3	4	Establish communication and collaboration connections for interactive tools such as meeting services, real-time polls, chats, whiteboard, etc.
3	4	Establish online community sites that are a location with specific content and customized views for particular groups of users.

Project Outcome 5: Enterprise Reporting Timeline

Year	Completion Quarter	Activities
1	1	Create a student profile report with indicators such as achievement, growth, attendance, school mobility and other data elements. Release online dashboard format of student profile when appropriate.
1	1	Collaborate with researchers to begin development of reports that can be used immediately to impact instructional outcomes and foster school improvement (ongoing).
1	1	Commence educator training and professional development plans on available reporting. Plan future needs and communication venues to reach all stakeholders.
1	4	Define needs. Determine available reporting capabilities and prioritize future development based on need and emerging data availability. Collect requirements.
2	2	Begin development of metadata, architecture models and build reporting modules.
2	4	Standardize statewide course codes, GPA calculations, attendance and others measures to promote comparison across districts and schools.
2	4	Create reporting modules that inform policy makers, educators, teachers and parents with appropriate data.
2	4	Develop reporting module that links student and staff data with facility and financial data to aid in more effective resource allocation.
3	4	Expand Correlates of Achievement Data-Based Indicator System to include interagency indicators. Develop corresponding professional development and training.
3	4	Research how P-20 data can be used to show relative alignment with state workforce needs. Create accompanying reports and ad to appropriate reporting modules.

Project Outcome #6 Student Record and Transcript Data Exchange Subsystem Timeline

Year	Completion Quarter	Activities
1	1	Form an advisory committee comprised of 8-12 public school district and higher education representatives to provide guidance and oversee the project, tentatively named the Delaware Transcript Center system.
1	1	Upon receiving Delaware's approval of the proposed project scope, the National Transcript Center (acting on DDOE's behalf), will facilitate initial discussions surrounding basic transcript formats and other compatibility requirements and respond to technical concerns.
1	2	Advisory committee produces an initial Delaware Transcript Center data specification document.
1	3	Analyze SCED handbook.
1	3	Hire/designate a curriculum-scheduler staffperson.
1	3	Make modifications to current data systems.
1	3	Develop district training methodologies and materials.
1	3	District communication and registration plan commences. Within 30 days of approval of project plan 1. "Coming Soon" document explaining key features, attributes and benefits is distributed to all districts, regional education agencies and data service centers. 2. Release a joint press release with a quotation, to state, local and industry media from the Secretary of Education or Deputy declaring the benefits and cost-savings of the system. Within 60 days of approval of project plan Frequently Asked Questions distributed to districts, regional education centers, data service centers, K-12 Instructional Data Warehouse Governance Council and the Enterprise Data Warehouse Governance Council. FAQ's include information about data security policies and FERPA compliance. Within 90 days of approval of project plan Distribute a data specifications sheet to all districts, regional education centers and data service centers.
1	4	Code and train district staff in four districts.
1	4	Refine training manual and materials.
1	4	Compare state course equivalent codes among different districts and recode as necessary.
1	4	The Delaware Transcript Center web site will be created, launched and branded using DDOE logos and graphics. The National Transcript Center will provide DDOE with a design prior to launch with mock-up approval. In order to accustom a pilot group of guidance counselors and registrars to the Delaware Transcript Center,

		initial functionality will permit participating districts to send and receive PDF-formatted records and transcript, with no data support.

Project Outcome #6 Student Record and Transcript Data Exchange Subsystem Timeline - Continued

1	4	Data specifications are published and circulated to LEAs, schools, districts and postsecondary institutions.
1	4	Pearson will commence programming for the Delaware Transcript Center that adds functionality permitting the receipt and transmittal of student record and transcript data.
1	4	Pearson initiates contact with public postsecondary institutions and encourages usage of the Delaware Transcript Center.
2	3	Code and train remaining districts and charter schools.
2	3	Begin setups and loading of data for eSchoolPLUS state course coding system in the course catalog.
2	3	Revise training materials.
2	3	Establish process for annual review of training materials and review and update of state course equivalents.
3	4	Pearson will host Delaware Transcript Center webinars and provide online video tutorials to registered PreK-12 school and district end users. Users will have access to the Delaware Transcript Center web site that includes PDF User Manuals and FAQs.

(d) **Project Management and Governance Plan**

Data Governance

DDOE is prepared to build on its track record of competent data stewardship of its K-12 Instructional Data Warehouse and prepared to implement intra-agency data governance processes that will facilitate the use of data in fostering continuous improvement across the Delaware public education system. Furthermore, DDOE will seek the necessary support from the Executive and Legislative Branches of Delaware state government to implement the interagency data governance structures needed to deliver collaborative data for research and analysis. Delaware Code presently requires the Cabinet-level agency heads from the Department of Education, Department of Labor, Department of Health and Social Services, and Department of Services for Children, Youth and Their Families to collaborate on issues and research of mutual interest. Drawing on the spirit of this mandate, DDOE intends to recommend implementation of two standing councils to establish a comprehensive data governance plan that encompasses both the K-12 Instructional Data Warehouse (intra-agency) and the Enterprise Longitudinal Data Warehouse (inter-agency) components that will comprise the new DASER system.

K-12 Instructional Warehouse Governance Council – Oversee governance of K-12 Instructional Data Warehouse component of DASER.

Responsibilities: Monitor progress on DASER and guide its development.

Membership: Director, DDOE Technology Management and Design, DDOE Data Managers, DDOE Work-Group Directors, University of Delaware's Delaware Academy for School Leadership Director.

- **K-12 Data Warehouse Policy Committee**:
  Responsibilities: Interoperability and policy-making regarding the compliant usage and access of K-12 Instructional Data. Identifies data elements needed. Develops training plans for DDOE and district personnel on DASER.
  Membership: DDOE and District Data Stewards.
- **K-12 Instructional Data Warehouse Research and Development**:
  Responsibilities: Drive and build capacity within DDOE for K-12 Instructional Data analysis and recommend reports and other venues for communicating results to stakeholders.
  Membership: DDOE and District Data Coordinators.
- **Pupil Accounting Coordinators Committee**:
  Responsibilities: Coordinate data collection, reporting and training on the K-12 Pupil Accounting System.
  Membership: District Pupil Accounting Data Coordinators.

Health Education and Workforce Council (HEWC) – Oversee governance of the Enterprise Longitudinal Data Warehouse component of DASER. Define relationships between disparate data sets (e.g. social services and education data), and prioritize what will be studied and measured and how it will be reported. Align data integration activities with state goals. Appoint appropriate personnel to related data governance subcommittees.

Membership: Cabinet-Level officials from agencies who contribute data to the Enterprise Longitudinal Data Warehouse (state agencies, external service providers, institutions of higher education).

Responsibilities: Identifies needs requiring Cabinet-level support in building the Enterprise Longitudinal Data Warehouse so that is meets the needs of each respective agency's stakeholders. Appoints members, coordinates activities of and hears reports from the following sub-committees:

- **Early Childhood Data Committee**
  Responsibilities: Serves as a resource on available early childhood data and coordinates the elements necessary to build the Early Childhood Data Cube within the Enterprise Longitudinal Data Warehouse.
  Membership: Co-Chairs (One from DDOE Technology Management and Design (TMD), One from an Early Childhood agency), Data Stewards from the state agencies with primary early childhood care and education responsibilities.
- **Enterprise Data Warehouse Committee**
  Responsibilities: Interagency linkage and interoperability within the Enterprise Longitudinal Data Warehouse.
  Membership: Co-chairs (One from DDOE TMD, One from agency external to DDOE), Interagency Data Stewards.
- **Enterprise Data Warehouse Research and Development Committee**
  Responsibilities: Consider Enterprise Longitudinal Data Warehouse data requests. Build a robust research agenda that meets the needs of DDOE Plan Goals as well as the needs of both DDOE and interagency stakeholders with information dissemination coordinated primarily through DASER.
  Membership: Chair, Interagency Data Coordinators, researchers and analysts, including institutions of higher education and other state agencies.

Project Outcome 1: Client ID Crosswalk Subsystem Project Management and Governance Plan

System Development: Enterprise Data Warehouse Committee (Inter-Agency collaboration), Director, DDOE Technology Management & Design (DDOE TMD), Database Manager (DDOE TMD), Programmers (DDOE TMD & Contracted), Security Administrator (DDOE TMD), Server Administrators, Delaware Department of Technology and Information.

Early Childhood Data Cube: Early Childhood Data Committee (Inter-Agency Data Stewards and Coordinators), Director, DDOE TMD, Database Administrator (DDOE TMD), Security Administrator (DDOE TMD).

System Reports & Queries: Enterprise Data Warehouse Research and Development Committee (Inter-Agency data users, analysts and researchers), Database Administrator.

Location, Development Activities – Client ID Crosswalk Subsystem: Primarily DDOE TMD.

Project Outcome 2: Interoperability Project Management and Governance Plan

Overall oversight: Director, DDOE Technology Management and Design

Interoperability Policies: Enterprise Data Warehouse Committee (Inter-Agency collaboration), Director, DDOE Technology Management & Design (TMD), Database Manager (DDOE TMD), Programmers (DDOE TMD & Contracted), Security Administrator (DDOE TMD), Server Administrator, (DDOE TMD), DDOE ED FACTS Coordinator, DDOE Wiki Coordinator, Delaware DTI Server and Data System Administrators, Contracted Programmers and Developers.

Location, Interoperability Policy Development, Testing – Interoperability: Primarily DDOE TMD.

Project Outcome 3: Client Management Subsystem Information Layer Project Management and Governance Plan

Overall oversight: Director, DDOE Technology Management and Design.

Component Management:
Data Evaluation Processes
K-12 Instructional Data Warehouse Governance Council, K-12 Instructional Data Warehouse Development Committee, DDOE TMD staff, External contractors.

Early Childhood Data Cube Development
K-12 Instructional Data Warehouse Development Committee, Early Childhood Data Cube Committee, DDOE Database Manager, DDOE Information Security Officer, DDOE Information Resource Manager, Early Childhood Agency Personnel.

Course Competency Alignment
Delaware P-20 Council, DDOE Curriculum Development Workgroup, Statewide Curriculum Cadre.

Research, Analysis and Reporting Strategies and Processes
K-12 Instructional Data Warehouse Governance Council, K-12 Instructional Data Warehouse Research and Development Sub-Committee.

Link Teachers & Teacher Preparation Programs
K-12 Instructional Data Warehouse Governance Council, K-12 Instructional Data Warehouse Research and Development Sub-Committee, Professional Accountability Workgroup.

Drop Out Prevention System Integration
DDOE Applications Manager, DDOE Database Manager, DDOE Information Resource Manager, Policy Analyst, State Board of Education, P-20 Council.

Link P-20 to Workforce Needs
Delaware P-20 Council, Department of Labor, Delaware Economic Development Office, Health Education and Workforce Council.

Link P-20 Performance to K12 Curriculum and Achievement
Delaware P-20 Council, Assessment and Standards Workgroup, K-12 Instructional Data Warehouse Research and Development Sub-Committee, External Education Research Contractor.

Link P-20 Data with National Student Clearinghouse Data
Delaware Higher Education Commission Data Analyst, Delaware P-20 Council, DDOE Information Resource Manager, DDOE Database Manager, DDOE Applications Manager.
Link Student Data with School Facility and School Finance Data

DDOE TMD Database Administrator, DDOE Financial Management Work Group, External Contractor, DDOE Information Resource Manager, DDOE Database Manager, DDOE Applications Manager.

Data Validation and Reliability
K-12 Instructional Data Warehouse Development Committee, DDOE Database Manager, DDOE Applications Manager, External Contractor.

Student Profile Report
Director, DDOE Pupil Accounting Data Manager, K-12 Instructional Data Warehouse Research and Development Sub-Committee.

Data Transformation Systems
DDOE Applications Manager, DDOE Database Manager, External Contractor.

Training and Professional Development
K-12 Instructional Data Warehouse Development Subcommittee, DESS.

Communications and Outreach Strategy
K-12 Instructional Data Warehouse Development Subcommittee, DDOE Pupil Accounting Coordinator, Policy Analyst – State Board of Education.

Location – Client Management Subsystem Information Layer Activities: DDOE.

Project Outcome 4 Enterprise Identity Management and Portal Subsystem Project Management and Governance Plan

Overall oversight: Director, DDOE Technology Management and Design.

Unified Active Directory, relational directory, directory manager, customized views: DDOE Network Manager, DDOE Security Administrator, DDOE Applications Coordinator, DDOE Server Administrators, DDOE Database Managers, DDOE Pupil Accounting Coordinator, K-12 Data Policy Committee, Enterprise Data Warehouse Committee, and External Contractor.

Customized Views, Web 2.0 functionality, online communities: Director, DDOE Technology Management and Design, DDOE Network Manager, DDOE Security Administrator, DDOE Applications Coordinator, DDOE Server Administrators, DDOE Database Managers, DDOE Pupil Accounting Coordinator, K-12 Data Policy Committee, Enterprise Data Warehouse Committee, Stakeholder Focus Groups as needed, External Contractor.

Location – Enterprise Identity Management and Portal Subsystem: DDOE.

Project Outcome 5: Enterprise Reporting Project Management and Governance Plan

Overall oversight: Director, DDOE Technology Management and Design.

Create a Student Profile Report: Director, DDOE Technology Management and Design, DDOE Pupil Accounting Coordinator, Educator Focus Groups.

Define needs and capabilities: K-12 Instructional Data Warehouse Research and Development

Training, Professional Development, Communication Plan: Director, DDOE Technology Management and Design, DESS, DDOE Pupil Accounting Coordinator, DDOE Applications Coordinator, Educator Focus Groups.

Metadata, architecture models, report development: External Contractor

Statewide course codes, GPA, attendance: Director, DDOE Technology Management and Design, DDOE Applications Coordinator, DDOE Pupil Accounting Coordinator, Curriculum Management and Design Workgroup.

Reporting Modules: Director, DDOE Technology Management and Design, DDOE Applications Coordinator, DDOE Pupil Accounting Coordinator , External Contractor, Stakeholder Focus Groups as needed.

Parent, Student User Interface: Director, DDOE Technology Management and Design, DDOE Applications Coordinator, DDOE Pupil Accounting Coordinator, External Contractor, Stakeholder Focus Groups as needed.

P-20 Alignment to workforce needs: DDOE Applications Coordinator, P-20 Council, Enterprise Longitudinal Data Warehouse Research and Development Committee

Correlates of Achievement System expansion: DDOE Pupil Accounting Coordinator, DDOE Applications Coordinator, DDOE Information Security Officer, DDOE Information Resources Manager, Health Education and Labor Council, Enterprise Longitudinal Data Warehouse Committee, K-12 Longitudinal Data Warehouse Policy Committee, Enterprise Longitudinal Data Warehouse Research and Development Committee, K-12 Longitudinal Data Warehouse Research and Development Committee, Early Childhood Data Committee, University of Delaware Research and Development Center, Delaware Academy for School Leadership, School and District Data Managers and Administrators.

Location – Enterprise Reporting Activities: DDOE (report and applications development), Districts, Schools, University of Delaware Research and Development Center.

Project Outcome #6 – Student Record and Transcript Data Exchange Subsystem Project Management and Governance Plan

Overall oversight: Director, DDOE Technology Management and Design

Develop, test and train on Student Record and Transcript Data Exchange Subsystem: DDOE Pupil Accounting Coordinator (Project Manager), DDOE Applications Coordinator, DDOE Network Administrator, DDOE Information Security Administrator, K-12 Instructional Data Warehouse Governance Council, Enterprise Longitudinal Data Warehouse Council, External Contractor(s), User Focus Groups as needed, DESS, Curriculum Development Workgroup, State Board of Education Policy Analyst.

Location – Student Record and Transcript Data Exchange Subsystem development: Primarily DDOE, training activities at schools, districts, regional service and data centers, institutions of higher education.

(e) Staffing

The following organizations and individuals will be primarily responsible for the accomplishment of the projects identified in this application for SLDS funds:

Delaware Department of Education

The Delaware Department of Public Instruction (DPI) was created in 1925. In 1997, the Delaware General Assembly passed legislation modifying DPI by making it a cabinet-level agency and changing its name to the Delaware Department of Education (DDOE). The position of State Superintendent was supplanted by the position of Secretary of Education, who serves at the pleasure of the Governor.

Secretary of Education

Dr. Lillian M. Lowery was appointed Secretary of Education in 2009 by Governor Jack Markell. Dr. Lowery holds a Doctorate in Education degree from Virginia Polytechnic Institute and State University, a master's degree in Education from the University of North Carolina at Charlotte and a Bachelor of Arts degree from North Carolina Central University. Prior to her appointment, Dr. Lowery served as Superintendent of the Christina School District in Wilmington. Before arriving in Delaware, Dr. Lowery was the Assistant Superintendent of Cluster VII for Fairfax County Public Schools in Fairfax, Virginia. She also served two years as an Area Administrator for Fort Wayne Community Schools in Fort Wayne, Indiana. She has seven years experience as a school building administrator and taught middle and high school English for 17 years in school districts in Virginia and North Carolina.

Delaware Department of Education Structure

DDOE is presently comprised of four branches: 1) Administration and Innovation, 2) Curriculum and Instructional Support, 3) Finance and Services, and 4) Career/Adult Education and Consolidated Programs. The Career/Adult Education and Consolidated Programs Branch provide leadership and oversight for statewide administrative and instructional technology. Administrative technology is assigned to the Technology Management and Design Work Group.

The Technology Management and Design Work Group will be primarily responsible for carrying out the activities of this grant.

Delaware Department of Education Technology Management and Design Work Group

The mission of the Technology Management and Design Work Group is to collect, organize and facilitate access to accurate and current data in order to provide schools, districts, DOE program managers and other consumers of education data with easy access to information that is needed to make informed decisions. The guiding principles for the Technology Management and Design Work Group are to : 1) Collect data centrally at DDOE as much as is feasible, 2) Improve the quality of educational decision making by providing accurate and timely

information to stakeholders and 3) Improve the quality of reporting mechanisms and provide user-friendly access to databases and reports.

The Technology Management and Design Work Group is staffed with personnel having expertise in database management, programming, project management, reporting, help desk and other areas that serve to furnish DDOE with a full range IT services. The Director manages a budget that includes system and hardware maintenance, software and application upgrades and the new acquisition software and hardware. The Technology Management and Design Work Group have the support of and the assistance of the Secretary of Education's Cabinet and Administrative Council in carrying out the activities of the SLDS-funded project. In addition, statewide resources such as the Curriculum Cadre, Pupil Accounting Coordinators, Delaware Department of Technology and Information, Principals Academy, P-20 Council, State Board of Education and others.

Associate Secretary for Career/Adult Education and Consolidated Programs
Dr. Michael Owens is the present Associate Secretary for Career/Adult Education and Consolidated Programs at DDOE. Dr. Owens has been a Delaware educator for more than 30 years. Dr. Owens' resume is attached.

Anticipated Time Allocation to SLDS Grant Activities, Dr. Michael Owens: 5%

Director, Technology Management and Design Work Group
Robert Czeizinger is the Director of Technology Management and Design at DDOE. He graduated from Wilmington College with a Master's of Science degree in Public Administration in 1999. He has worked in the IT field in the areas of information resource management, project lead and IT department management for more than 26 years. He has worked at DDOE for 15 years. Mr. Czeizinger is responsible for managing DDOE's data collection efforts as well as maintaining DDOE's technology infrastructure and the work group's personnel.

Anticipated Time Allocation to SLDS Grant Activities, Robert Czeizinger: 25%

Education Associate, Pupil Accounting
Bruce Dacey is the Education Associate, Pupil Accounting for DDOE and assigned to the Technology Management and Design Work Group. Dr. Dacey will serve as Project Manager for the SLDS Grant. Prior to serving in his present role at DDOE, Dr. Dacey was a teacher and administrator in Delaware for 26 years. He has a Doctorate in Education from Wilmingon University and holds MCSE and MCT certifications. Bruce has extensive knowledge and experience with the SLDS and has served in leadership roles in national and state professional organizations.

Anticipated Time Allocation to SLDS Grant Activities, Dr. Bruce Dacey: 50%

Education Associate, Application Development Management
Jeff Fleming serves in the role of Manager of Application Development. He has served in

various capacities in technology and data management at the Department of Education for 10 years and holds a Master's of Science Degree in Public Administration from Wilmington University. Mr. Fleming has extensive experience managing external contracts for programming services to offer the SLDS Grant project.

Anticipated Time Allocation to SLDS Grant Activities, Jeff Fleming: 30%

Education Associate, Information Resource Management

Matthew Wright is the Education Associate, Information Resource Management at the Technology Management and Design Work Group. Mr. Wright has a Master's of Science? of Business Management and a Bachelor of Science Degree in Information Resource Management. Mr. Wright has worked for DDOE for eight years and manages all aspect of the computer systems and data center.

Anticipated Time Allocation to SLDS Grant Activities, Matthew Wright: 10%

Education Associate, Information Security

Paul Pond is the Information Security Officer for DDOE. He graduated from Wilmington University in 2008 with a Bachelor of Science Degree in Computer and Network Security. Mr. Pond has worked in technology for 27 years, including 20 years while in military service and 7 years as a civilian network engineer. He is responsible for developing, implementing and enforcing the policies, standard, guidelines and processes used to ensure the departmental systems and school district data are secured from internal and external threats and from natural disaster.

Anticipated Time Allocation to SLDS Grant Activities, Paul Pond: 25%

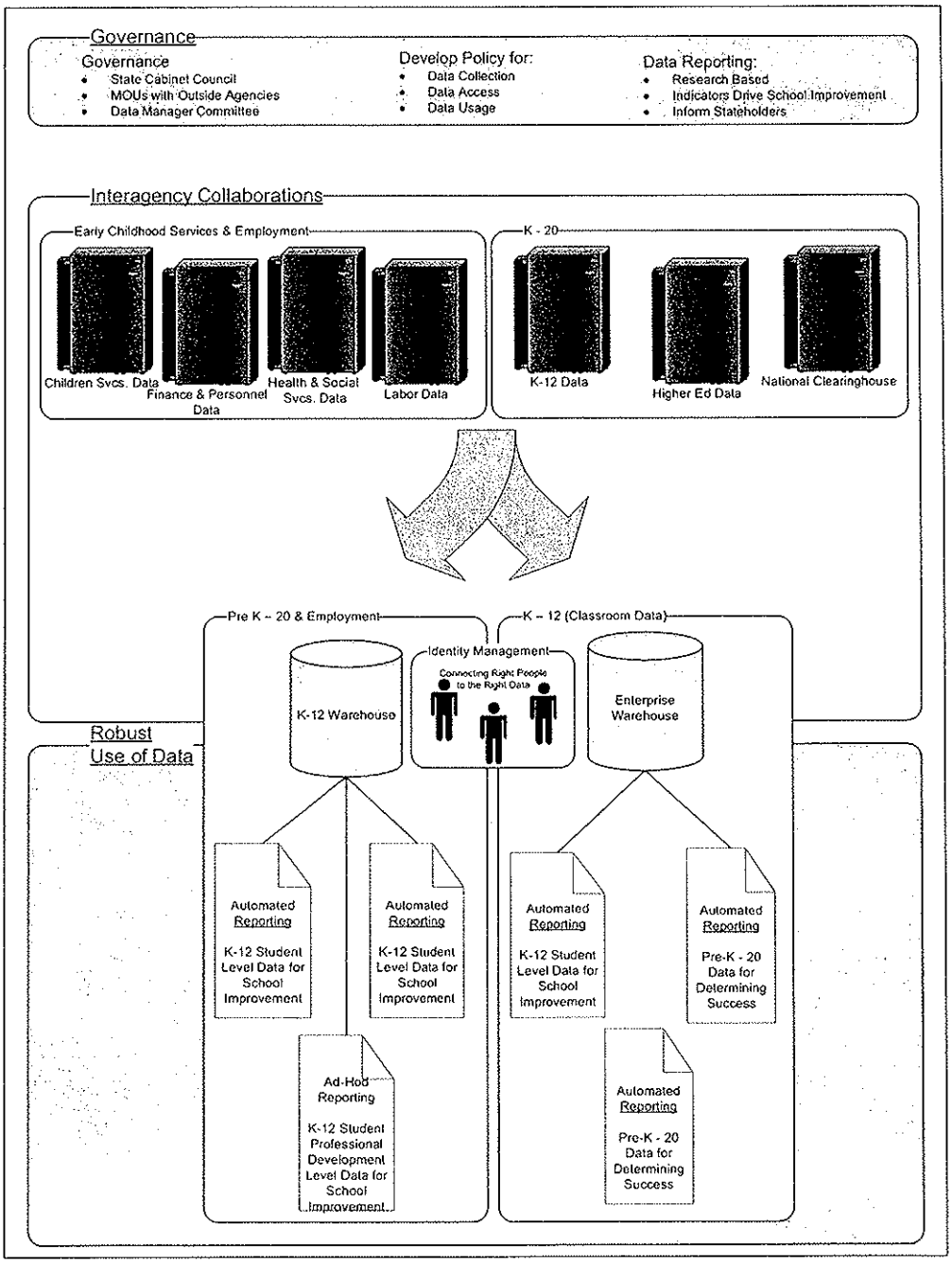
Policy Analyst, Delaware State Board of Education

Judi Coffield is the Policy Analyst for the Delaware State Board of Education and serves as staff for the Delaware P-20 Council. Judi completed her undergraduate work at West Liberty State College (WV), where she graduated with honors. She earned a Master's Degree in Instruction and Doctorate Degree in Educational Leadership at the University of Delaware. Judi has 23 years of experience in education ranging from classroom teacher to building, district and state level administration.

Anticipated Time Allocation to SLDS Grant Activities, Judi Coffield: 10%

Data Analyst, Delaware Higher Education Commission

Alan Phillips is the Data Analyst for the Delaware Higher Education Commission, a division of the Delaware Department of Education, where he has worked for 11 years. He is the Chair of the P-20 Data Committee, which is charged with collecting the data for the P-20 Data Cube. He is presently working on a Master's of Science in Higher Education Administration with a concentration in Institutional Research.


Governance
Governance
State Cabinet Council
MOUs with Outside Agencies
Data Manager Committee
Develop Policy for:
Data Collection
Data Access
Data Usage
Data Reporting:
Research Based
Indicators Drive School Improvement
Inform Stakeholders
Interagency Collaborations
Early Childhood Services & Employment
Children Svcs. Data
Finance & Personnel Data
Health & Social Svcs. Data
Labor Data
K - 20
K-12 Data
Higher Ed Data
National Clearinghouse
Pre K – 20 & Employment
K – 12 (Classroom Data)
Identity Management
Connecting Right People to the Right Data
K-12 Warehouse
Enterprise Warehouse
Robust Use of Data
Automated Reporting
K-12 Student Level Data for School Improvement
Automated Reporting
K-12 Student Level Data for School Improvement
Automated Reporting
K-12 Student Level Data for School Improvement
Automated Reporting
Pre-K - 20 Data for Determining Success
Ad-Hoc Reporting
K-12 Student Professional Development Level Data for School Improvement
Automated Reporting
Pre-K - 20 Data for Determining Success

Budget Narrative

Delaware's Automated System for Educational Reporting (DASER) Grant Proposal

The Delaware Department of Education (DDOE) is requesting a Statewide Longitudinal Data System (SLDS) grant in the amount of $6,005,034 from the U.S. Department of Education's Institute of Education Sciences (IES). The following descriptions provide an explanation for the federal (i.e., grant) and non-federal resources that will be used to achieve the goals that have been established for this three-year project.

The DDOE has long prioritized and directed department resources to the development of an education longitudinal data system and accordingly has received national recognition for its success in this area. It should be noted that, in addition to the items described in this Budget Narrative, a very large commitment of resources has been and will continue to be made to this project by local school districts and school staff throughout Delaware. Recently, Governor Jack Markell and Secretary of Education Lillian Lowery announced the "Plan to Strengthen Delaware's Schools," where the commitment to continue development of its education SLDS has been renewed alongside other initiatives that will help ensure Delaware's schools are world-class. The nation's current economic circumstances have impacted Delaware severely and will affect the rate to which DDOE is able to make further progress on our data systems. However, with federal funding we believe we could be a model for the country by the conclusion of the grant period if this application is successful.

The budget for our SLDS grant specifies travel for two persons to attend the SLDS grantee meetings in Washington DC. As required we are budgeting travel for two staff members to attend these SLDS meetings each year. We expect to have costs of $200.00 for mileage, $1200.00 hotel and $300.00 for meals for a total travel cost for two people $5,100.00.

Success of developing and implementing the components of this project require the attention of a fulltime Project Manager. The Project Manager would be responsible for planning, organizing, and managing all aspects of DASER. This fulltime position would guarantee the success of this project. It is estimated that the annual cost of a full time project manager would be $165,000.00. The total for three years is $495,000.00.

In addition to the Project Manager, DOE feels it is important to include current staff who will dedicate a portion of their time to ensure the success of this entire project. The three year cost of this oversight will be as follows:

Position/Assignment	State In-Kind	Federal Grant
Travel for 3 years		$5,100
Project Oversight	$75,000	
Development Manager	$90,000	
Integration Management	$150,000	
Project Manager (3 Years)		$495,000
Project Manager Supplies & Equip	$2,600	
Total	$317,600	$500,100

Outcome #1: Client ID Crosswalk Subsystem

One of the fundamental subsystems of Delaware's SLDS Grant is the creation of a data repository of client tracking identification numbers used by our various working partners. These partners include Delaware Health and Social Services, Services for Children, Youth, and Their Families, Labor, and Institutions of Higher Education and each uses their own client tracking IDs. This subsystem budget request would fund the creation of a repository containing all client tracking IDs used in these systems so that a client could be identified or "crosswalked" across systems to facilitate matching. This will allow us to finally track students from early childhood through their education careers, and into the workforce.

This will be one of the more complex subsystems of our project. The complexity will require the assignment of our DOE Policy Analyst. Up to 30% of their time will be required to work with various Councils and Project Partners to address regulatory concerns. After the regulatory roadblocks have been ironed out, this project will move to the development phase. This phase will require two full time programming staff persons. One will come from in-house programming staff. The other staff member will be hired to help develop the Client ID Crosswalk Subsystem.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
Policy Analyst (30% for 3 years)	$105,000	
DDOE Programmer (20% for 3 years)	$75,000	
DOE Contracted Programmer (2 years)		$330,000
DDOL Programmer (1 year)		$165,000
DDHSS Programmer (1 year)		$165,000
DDSCYF Programmer (1 year)		$165,000
DDOE Documentation and Trainer (3 years)		$495,000
Total	$180,000	$1,320,000

Outcome #2: Interoperability

DDOE must have a common standard for data element definitions in order to achieve the interoperability required to share data within the agency and with our partner agencies. This will ensure that we can easily import data into the common longitudinal data system (DASER). Data received from our partner agencies will be included in the metadata dictionary. Alignment of DDOE adopted standards to the NCES Handbooks, SIF, NEDM, EDFacts, and other national standards will reduce the requirements for translations and crosswalks when reporting. To do this we propose to contract with a vendor to design and document the entity relationship design (ERD), enterprise relationship data model, and metadata dictionary to incorporate all agencies involved with this effort.

The contractor will gather documentation, conduct interviews, develop transformations, and map items and data elements from current collections, repositories, and outputs to the new enterprise data dictionary. The dictionary in turn will be mapped to SIF or other standards as designated by the DDOE. This contractor will additionally, create SEA and agency user accounts and designate user roles, install applications, train users, and provide maintenance and support for this endeavor.

The cost for this contracted ERD Consultant is estimated at $165,000 for one year. Once the Metadata dictionary is populated we anticipate maintenance at a cost of $49,500 for years 2 and 3.

The DDOE will also contract with a vendor or contractor to provide an Information Systems Architecture (ISA) Plan. This set of standards and policies must be adopted and followed to ensure a system that can be maintained efficiently and be sustainable. The vendor or contractor will gather documentation, conduct interviews and follow-up as needed, draft, review, finalize, and present the final ISA document for adoption. The contractor will facilitate meetings with stakeholder groups as appropriate, provide templates, process maps, and drafts for needed references, and train DDOE staff on maintenance of the documents. The first year cost will be $80,000 for services to create documentation, $16,800 in the second year to update the ISA document as well as conduct interviews as needed, and $17,640 in the third year for maintenance. Expected travel expenses for onsite consultations, interviews, and presentations are $1,500 for year 1, $3,000 for year 2, and $3,000 for year 3.

The DDOE will document and add to the metadata all quantitative, longitudinal statistics and/or indicators (e.g. dropout rate) and other key facts (e.g. disaggregation by school name). This will be supervised by the Director of TMD and will be done by current DDOE employees and contractors so that no funds from this grant will be used for this purpose.

A larger part of this subsystem will include developing the standards, policies, processes, and guidelines needed to ensure the smooth flow of data from State agencies, to the data repository, to the stakeholders. This will require development policies and guidelines for each data partner. This cross agency endeavor will require a policy analyst to meet with each agency and develop policies that meet the needs of all. It is estimated this will require six months of a contracted analyst at $40,000. The policy will be updated annually and require approximately 3 months of work for years 2 and 3 ($20,000 each year) along with travel.

In addition our plan is to document all of our quantitative statistics/indicators through the use of a DOE staff member. This staff member will be tasked with developing detailed process documents which describe how indicators and statistics are developed.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
ERD Consultant		$165,000
Year 2 & 3 Maintenance		$99,000
ISA Travel		$7,500
ISA Vendor		$114,440
Process Flow Doe Staff	$15,000	
Data Access Management Staff	$15,000	
Data Access Analyst		$80,000
Data Access Travel		$7,500
Document Statistical Processes	$45,000	
Total Outcome #4	$75,000	$473,440

Outcome #3: Client Management Subsystem Information Layer

Centrally managed applications support several core reporting functions at the district level. This layer will be the binding agent for all other DASER subsystems. It will authenticate users via an enterprise identity management system, permit them access to data elements residing in a data warehouse comprised of data from Project Partners and allow reporting through the Enterprise Reporting Subsystem. Because of this subsystem, users will no longer be limited to information based in a particular module, cube or data mart, but will have handy access to data elements regardless of the origination, as deemed appropriate by their assigned level of access. DDOE will be able to expedite data-driven reports that are intra- and inter-agency in nature, yet appear to the user as originating from a seamless repository of data.

Accomplishment of the development of this subsystem will provide a data framework for capturing essential early childhood indicators, align post-secondary first-year course

competencies with K-12 courses to reduce postsecondary remediation, and link data to teachers, programs, workforce needs, and financial data.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
DOE Lead Programmer (50% for 3 years)	$150,000	
2 Data Warehouse Servers		$60,000
Contracted Data Warehouse Analyst (3 yrs)		$495,000
Contracted Data Warehouse Analyst (3 yrs)		$495,000
Total	$150,000	$1,050,000

Outcome #4: Enterprise Identity Subsystem

Success of DASER requires a unified authentication portal for all users from parents to teachers to administrators, as well as other stakeholders. Several mechanisms are used to manage authentication currently, and each is a standalone system. When a DASER user accesses data in one repository and needs to access data from another repository, they need to re-authenticate. This new subsystem will allow a customer to be assigned a role. The assigned role will have access to authorized data and reports regardless of which data repository it resides in. The result is simplified and central management of access for all users. Along with this is the need to provide data governance coordination activities. This state-supplied coordinator will be responsible for ensuring that the right people have access to the correct reports and nothing more.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
Data Governance Coord (25% 3 years)	$56,250	
Hardware and Software		$92,000
Application Program Developer 3 years		$495,000
DOE Contracted Programmer 1 year		$165,000
Total	$56,250	$752,000

Outcome #5: Enterprise Reporting Subsystem

Assembling data into repositories is only the first step in promoting the use of data for continuous improvement in Delaware's schools. DDOE is aware of areas where improvements can be made. This subsystem will be the engine to provide meaningful data to all stakeholders. Existing reports will be refined to show more pertinent data in a more readable format as well as developing and providing reports for student profiles and tracking student growth, student benchmarks, targeted reports for policymakers, educators, parents, and students, and many others.

In order to accomplish this, common course codes will be implemented, professional development and training opportunities created, and a common reporting system and methodology developed for future reporting requirements and ad hoc querying.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
DOE Programmer	$210,000	
Research and Reporting Analyst		$435,000
Documentation and Training Professional		$405,000
Total	$210,000	$840,000

Outcome #6: Electronic Transcript Subsystem

Delaware has a statewide pupil accounting system contract with the vendor Sungard Public Sector. All public schools can generate a PDF version of a transcript but it is not an official one unless printed and signed by an authority. DDOE will implement a solution from the National Transcript Center product in order to provide official electronic transcripts. This electronic transcript subsystem will be called the Delaware Transcript Center system.

We propose to contract with the National Transcript Center for deploying the Delaware Transcript Center system (DTC). The costs are comprised of three components: 1) an annual subscript, based on a state's public K-12 enrollment, 2) initial set-up services; and 3) additional options such as expanding the scope of our trading partner network.

The annual subscription fee based on Delaware's PK-12 enrollment of 125,000 students (@ $0.30 per student) is $37,500. For the three year life of this grant the total subscription is $112,500. The second component is for initial onetime setup costs in the amount of $25,000, registering districts at $950, district implementation and training (19 LEAs @ $300 per LEA) is $5,700, and creating data formats and translations is $180,000. We also propose to add additional options including Private In-State Colleges at $7,266 per year, Higher Ed Exchange at $18,141 per year, NTC Network Unlimited at $36,282 per year, Secure PDF Pickup to Any Email Address at $3,628 per year, and Hybrid Data Source Deployment at $18,141 per year.

The DDOE will use National and State data standards for the student record and transcript data. These standards will be documented and added to the metadata.

The Course Classification Subsystem component involves contracting for a curriculum specialist to crosswalk the school district courses with the NCES Course Classification system. We anticipate one contracted employee for 12 months for the three years of the grant at $165,000 per year for a total of $495,000. The DDOE curriculum workgroup will continue the project after the third year of the grant.

The cost of developing this subsystem will be as follows:

Position/Assignment	State In-Kind	Federal Grant
Annual Subscription DTC		$112,500
One-Time Setup		$211,650
Data Formats and Translations		$250,334
Course Classification Development (3 years)		$495,000
Total		$1,069,484